



UNITED STATES DEPARTMENT OF COMMERCE
Pat nt and Trad mark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/455,991	12/06/99	OHTANI	H 07977/213002

020985
FISH & RICHARDSON, PC
4350 LA JOLLA VILLAGE DRIVE
SUITE 500
SAN DIEGO CA 92122

MMC2/0718

EXAMINER

DIAZ, J

ART UNIT

PAPER NUMBER

2815

DATE MAILED:

07/18/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/455,991

Applicant(s)

OHTANI ET AL.

Examiner

José R. Díaz

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2001.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-12 and 14-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-12 and 14-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 5) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

➤ The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

➤ Claims 6-11, 14, 17-19, and 22-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Zhang et al. (US Patent No. 5,529,937).

Regarding claims 6, 9, 14, 18 and 23, Zhang et al. teach forming an amorphous silicon film (304) on a substrate (301) having an insulating surface (302); selectively introducing metal elements that promote the crystallization of silicon into a plurality of regions (300) of said amorphous silicon film (304); conducting a heat treatment to allow crystal to grow in parallel to said substrate from said plurality of regions into which the metal elements have been selectively introduced, wherein at least one of said regions into which the metal elements have been selectively introduced is not used for formation of an element but provided for controlling crystal growth states of other regions into which the metal elements have been selectively introduced (column 13, lines 11-22); and patterning to form island (see col. 13, lines 22-25).

Art Unit: 2815

Regarding claim 7, Zhang et al. teach that the density of the metal is higher near leading edge, compared with crystallized areas between the leading edges and the directly doped area (column 13, lines 28-31).

Regarding claims 8, 10 and 19, Zhang et al. teach that the metal element is Ni (column 5, lines 64-67 and column 13, lines 14-16).

Regarding claim 11, Zhang et al. teach that the introduction of the metal elements is conducted by an ion implantation method (column 11, lines 30-31).

Regarding claims 17 and 22, Zhang et al. teach that the semiconductor device is used in a display unit (see col. 1, lines 20-23).

➤ Claims 6-12 and 14-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamasaki et al. (US Patent No. 6,077,731).

Regarding claims 6, 9 and 23, Yamasaki et al. teach a method for forming a crystal silicon film (see columns 1-128) comprising: forming an amorphous semiconductor film (see col. 127, lines 21-22); introducing a metal element (see col. 127, lines 23-25); crystallizing the amorphous semiconductor film (see col. 127, lines 26-30); and patterning to form at least a crystalline semiconductor island (see col. 127, lines 31-33). Furthermore, Yamasaki et al. teaches that the metal element added region is separated from the crystalline semiconductor island by a distance and has a length (see Figures 14 and 15; col. 11, lines 62-67; and col. 12, lines 1-63).

Regarding claim 7, Yamasaki et al. teach that the length is set to 50% or more (see Figures 14 and 15).

Regarding claims 8, 10 and 19, Yamasaki et al. teach that the metal element is at least Ni (see col. 127, lines 64-67).

Regarding claim 11-12, Yamasaki et al. teach introducing the metal element by ion implanting or by coating (see col. 11, lines 62-67 and col. 12, lines 1-63).

Regarding claims 14 and 18, Yamasaki et al. teach that the semiconductor film comprises silicon (see col. 11, lines 52-61).

Regarding claims 15-16 and 20-21, Yamasaki et al. teach an S value not lower 75 mV/dec and not higher than 100 mV/dec (see col. 17, lines 8-16).

Regarding claims 17 and 22, Yamasaki teach that the semiconductor device is used at least in video camera (see Figure 60A-60F).

➤ Claims 6, 8-10, 12, 14, 17-19 and 22-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Takemura (US Patent No. 5,616,506).

Regarding claims 6, 8-10, 12, 14, 18-19 and 23, Yamasaki et al. teach a method for forming a crystal silicon film (see columns 1-14) comprising: forming an amorphous semiconductor film (103) (see col. 6, line 31); introducing a metal element (105) (see col. 6, line 33); crystallizing the amorphous semiconductor film (see col. 6, lines 37-47); and patterning to form at least a crystalline semiconductor island (see col. 6, lines 48-58). Furthermore, Yamasaki et al. teaches that the metal element added region is separated from the crystalline semiconductor island by a distance and has a length (see col. 6, lines 48-65).

Regarding claims 17 and 22, Yamasaki et al. teach that the semiconductor device is used in a display unit (see col. 1, lines 13-19).

Double Patenting

➤ The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

➤ Claims 6-12 and 14-23 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 48-56 of U.S. Patent No. 6,077,731. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the application and the patent claim the same invention. For example, see claim rejection under 35 U.S.C § 102.

Response to Arguments

➤ Applicant's arguments with respect to claims 6-12 and 14-23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

➤ Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to José R. Díaz whose telephone number is (703) 308-6078. The examiner can normally be reached on 8:00 - 5:00 Monday through Fridays.

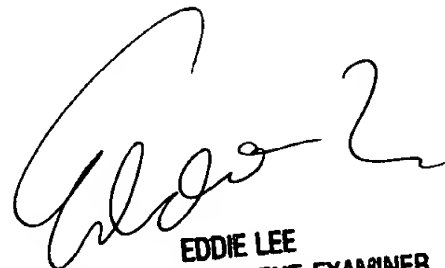
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Application/Control Number: 09/455,991
Art Unit: 2815

Page 7

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JRD
July 14, 2001



EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800